

Work Order ID 52464

Friday, September 25, 2009 9:18:21 AM



Page 1

Item ID: D206-667-203TRN

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Turning Detail

Start Date: 9/25/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 10/12/2009 Req'd Qty: 1.00

Customer:

Reference:

Approvals:

Process Plan:

PL

Date:

09-9-25

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D206-667-243	Rev C								

100

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA089□2-Turn first side as per Folio FA089□3-File down transition lines smooth.

Q.m 09 - 10 - 02①

110

0.00



QC1- Inspect dimensions to dimension sheet

QC

Memo

0.00

Quality Control

Q.m 09 - 10 - 02①

120

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Turn second side as per Folio FA089□2-File down transition lines smooth.
□
3-Remove sand and plugs□4-Scrib part# and batch #

Q.m 09 - 10 - 02①

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Run Start

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130

QC1- Inspect dimensions to dimension sheet

0.00



QC

Memo

0.00

Quality Control

A.M. 09-10-02①

140

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

i / 9-10-5
- Aug 9 10

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

M 09 10 05①

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Page 3

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Start Date: 9/25/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 10/12/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

Q.m 09-10-05 ①

170

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and Stock in kanban rack ☐ Location: x-tube cel

IX 09-10-05

180

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

09/10/06 ①
MF 09-10-05

Picklist Print

Friday, September 25, 2009 9:18:21 AM

Page 1

Work Order ID: 52464

Parent Item: D206-667-203TRNRevC

Parent Item Name: Crosstube Turning Detail

Comments:

Start Date: 9/25/2009

Required Date: 10/12/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D6004-115RevA		Manufactured	No			100	Each	74.0000	1.0000			
Crosstube Material												

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
LG	74	
34685	17	
34774	24	
38336	33	

Q.m 09-10-020

1

DART AEROSPACE LTD	Work Order: 52464
Description: Crosstube Assembly	Part Number: D206-667-243
Inspection Dwg: D206-667-243 Rev: C	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article
 ☐ Prototype

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.490	+0.005/-0.000	2.490	/		
	2.018	+0.005/-0.000	2.023	/		
	2.079	+0.005/-0.000	2.084	/		
	2.145	+0.005/-0.000	2.150	/		
	2.209	+0.005/-0.000	2.214	/		
	2.287	+0.005/-0.000	2.292	/		
	2.363	+0.005/-0.000	2.366	/		
	2.433	+0.005/-0.000	2.436	/		
	0.200	+/-0.010	0.200	/		
	0.500 x 30°	+/-0.010	0.500 x 30°	/		
	R0.063	+/-0.010	R0.063	/		
	R0.500	+/-0.010	R0.500	/		
	4.438	+/-0.030	4.438	/		
SIDE B	104.91	+/-0.020	104.910	/		
	2.490	+0.005/-0.000	2.492	/		
	2.018	+0.005/-0.000	2.023	/		
	2.079	+0.005/-0.000	2.084	/		
	2.145	+0.005/-0.000	2.150	/		
	2.209	+0.005/-0.000	2.214	/		
	2.287	+0.005/-0.000	2.292	/		
	2.363	+0.005/-0.000	2.365	/		
	2.433	+0.005/-0.000	2.436	/		
	0.200	+/-0.010	0.200	/		
	0.500 x 30°	+/-0.010	0.500 x 30°	/		
	R0.063	+/-0.010	R0.063	/		
	R0.500	+/-0.010	R0.500	/		
	4.438	+/-0.030	4.438	/		

Measured by: Q.M	Audited by: AWM	Prototype Approval:	N/A
Date: 09.10.02	Date: 9-10-5	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	06.09.01	New Issue (P/O D206-667-203)	KJ/JLM	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Item	Qty	Part Number	Description
	-243		
1	X	D206-667-243	CROSSTUBE ASSEMBLY (206L HIGH AFT)
2	1	D6004-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2892-1	SUPPORT
6	4	D3595-063-450	RUBBER CUSHION
7	4	MS21920-22	CLAMP
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299- 947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6004-115
FINISHED LENGTH = 104.91±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-243" AND BATCH NUMBER ON
INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 21.9 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY,
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2892-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER
QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-22 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE
D2892-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE
LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 52464

RELEASED
08/11/06

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-450 WAS D2858-400-773 (ZN D8-2 & A5-2); REMOVED REF. & ADD TOLERANCES (ZN 4-3, C5-3, D3-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF	DRAWING NO.	REV. C
CHECKED	RF	D206-667-243	SHEET 1 OF 4
MFG. APPR.	RF	TITLE	SCALE
APPROVED	RF	CROSSTUBE ASS'Y (206L HIGH AFT)	NTS
DE APPR.	RF	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DATE	08.11.06		

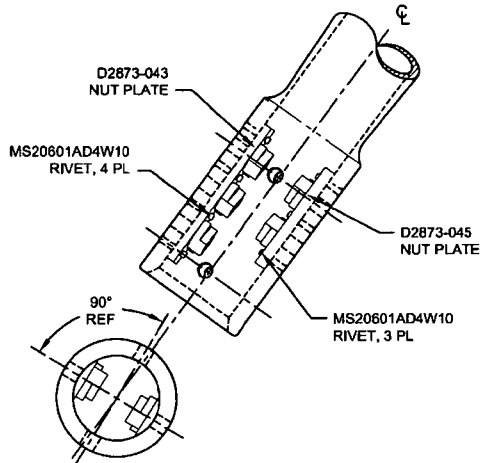
w/o 52464

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8/11/12

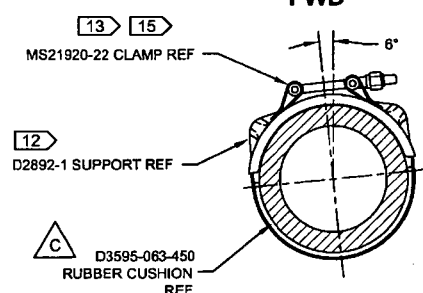
- 12 D2892-1 SUPPORT
2 PL
- 15 MS21920-22 CLAMP
4 PL
- 13 D3595-063-450
RUBBER CUSHION
4 PL, (UNDER CLAMP)

D206-667-603

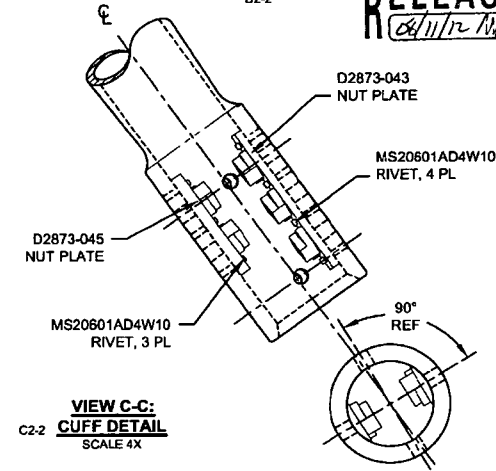
D206-667-243
ASSEMBLY DETAIL
(VIEW LOOKING FWD)



VIEW A-A:
CUFF DETAIL
SCALE 4X



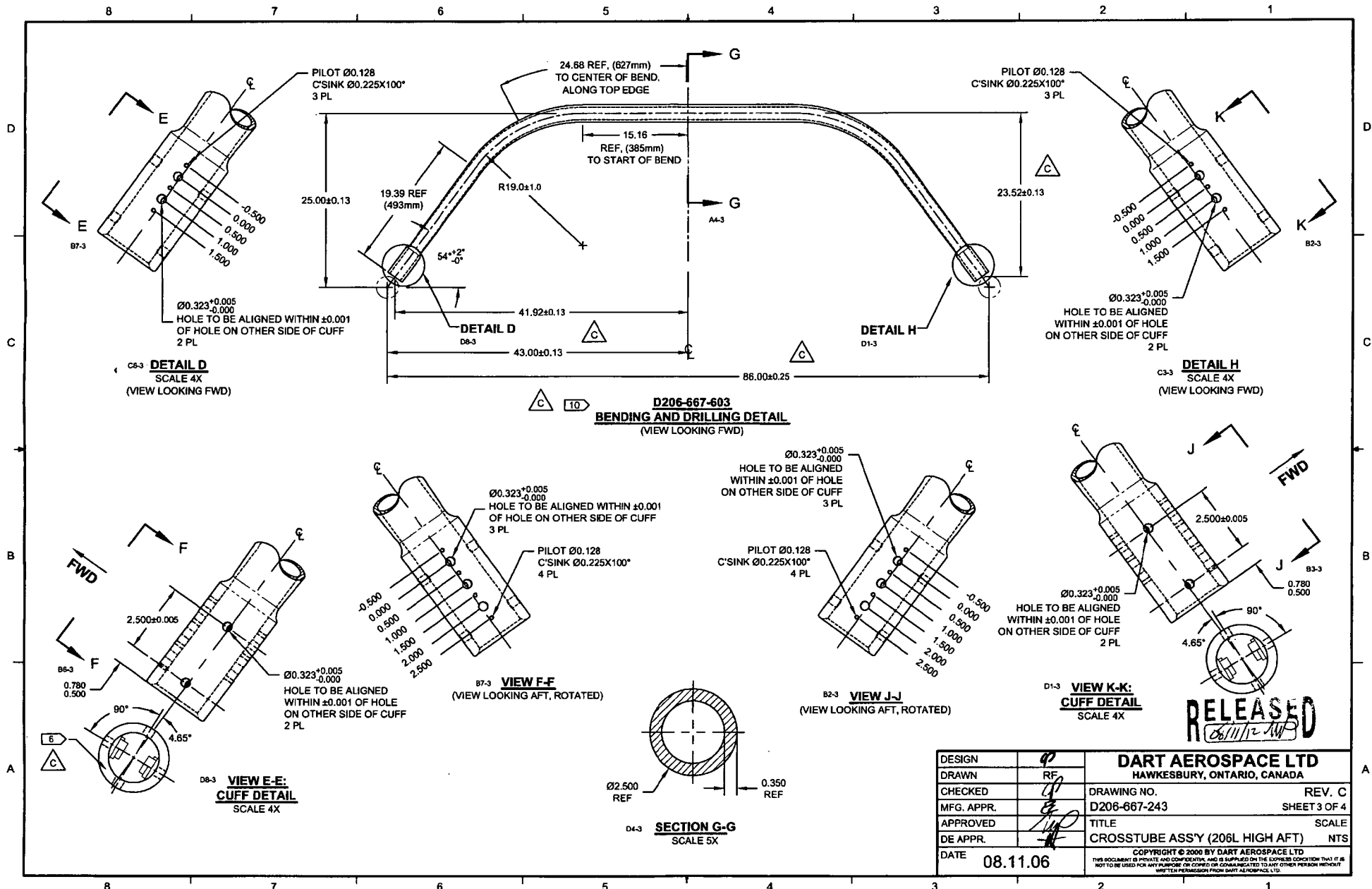
SECTION B-B
SCALE 5X



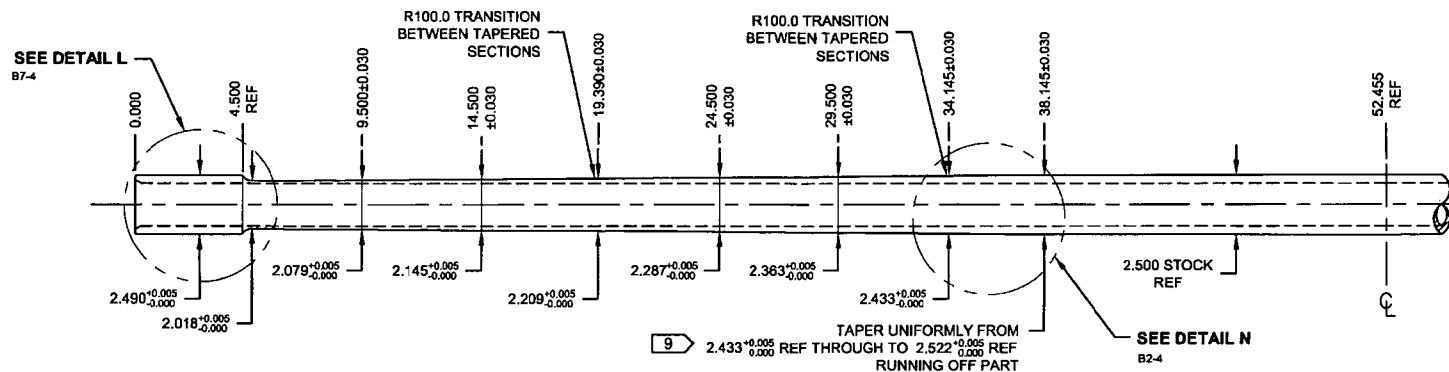
VIEW C-C:
CUFF DETAIL
SCALE 4X

DESIGN	40	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	40	DRAWING NO.	REV. C
MFG. APPR.	40	D206-667-243	SHEET 2 OF 4
APPROVED	40	TITLE	SCALE
DE APPR.	40	CROSSTUBE ASS'Y (206L HIGH AFT)	NTS
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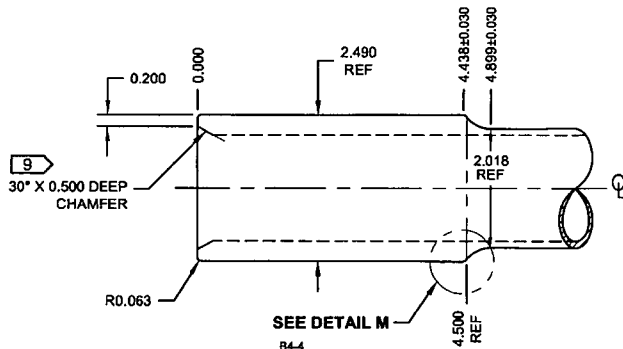
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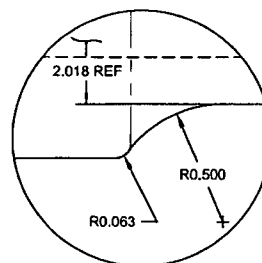
W/O 52464



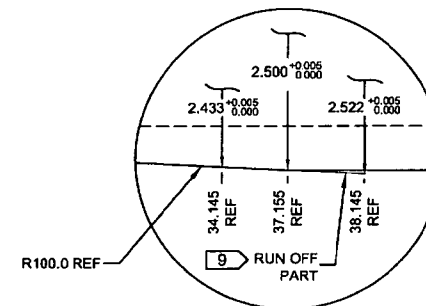
C TURNING DETAIL



C7-4 DETAIL L: CROSSTUBE CUFF
NOT TO SCALE



B6-4 DETAIL M: CUFF TRANSITION
NOT TO SCALE



DETAIL N: TAPER RUN-OFF
NOT TO SCALE

RELEASED
08/11/2006

DESIGN	9	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	4	DRAWING NO.	REV. C
MFG. APPR.	4	D206-667-243	SHEET 4 OF 4
APPROVED	4	TITLE	SCALE
DE APPR.	4	CROSSTUBE ASS'Y (206L HIGH AFT)	NTS
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